ABSTRACT

A photodetector comprises a semiconductor substrate with entrance and reflecting faces formed at the substrate upper surface. The reflecting face forms an acute angle with the substrate surface and is positioned so that an optical beam transmitted through the entrance face into the substrate is internally reflected from the reflecting face toward the substrate upper surface. A photodetector active region is formed on the substrate upper surface and is positioned so that the reflected optical beam impinges on the active region. The photodetector may be mounted on a second substrate for receiving an optical beam from a planar waveguide formed on the second substrate or an optical fiber mounted in a groove on the second substrate.